PDR RID Report

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Document	PDR			

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Review CSMS
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Priority 1

Section CSS **Page** **Figure Table**

Category Name Design-CSS **Actionee** HAIS

Sub Category Interprocess communication

Subject Message Passing Service

Description of Problem or Suggestion:

The message passage services should:

1) decouple the choices of synchronous versus asynchronous, and services (e.g., security),
2) provide a uniform set of services across synchronous and asynchronous message passing, and
3) make the different uniform message passing interface.

It currently does none of these.

Provide message passing within threads in a more general way (under call interface to DOF), to make design of application packages more straightforward. This general capability should include security and exception handling services as well.

Originator's Recommendation

Support the capabilities described above.

GSFC Response by: **GSFC Response Date**

HAIS Response by: Forman **HAIS Schedule** 2/17/95

HAIS R. E. Winston **HAIS Response Date** 2/10/95

CSMS agrees that there are benefits in providing these higher-level CSS interfaces, however there may be some difficulties in implementing them as noted below. CSS intends to provide a more uniform interface where possible. Detailed interfaces will be provided by CDR.
The current plan of CSS was to provide
1. synchronous message passing through the DOF services
2. asynchronous message passing through a COTS product and
3. deferred synchronous message passing by implementation on top of the asynchronous message passing.
Another way to provide asynchronous message passing is to use the threads option in the DOF. But this is a complicated implementation and limited by a maximum number of threads. It would not be as robust and as feature rich as a COTS product. A trade study on the asynchronous message passing has been done and can be found in the CSMS PDR Trade Studies document. The outcome of the trade supported a COTS implementation and to implement the deferred synchronous message passing on top of the asynchronous message passing. This COTS product is different from the DOF that CSMS is providing and, integrating these two with one common interface needs substantial effort and the availability of source code for OODCE (this has been discussed with Art Gaylord).
Currently using the DOF (for synchronous messaging), an application programmer specifies the interface in Interface Definition Language (IDL) which is passed through a compiler to generate the actual language files. In the asynchronous message passing, actual language APIs will be provided by CSS. Any change to the IDL compiler to generate the message passing APIs will require changes in the IDL compiler. As such, it is not a trivial job. CSMS will look into providing a more unified messaging interface approach.

Status **Closed** **Date Closed** **3/8/95** **Sponsor** **Broder**

****** **Attachment if any** ******

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